

P041 The effect of NO[•] on Fas ligand induced apoptosis of human T cells

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Rheumatoid arthritis (RA) is an inflammatory joint disease characterised by T cell accumulation in the synovium. Resolution of self-limiting inflammation may involve the removal of T cells by apoptosis. In RA, autoreactive T cells appear to be apoptosis-resistant. Nitric oxide (NO[•]) is a free radical that is increased in RA joints and is implicated in this resistance. NO[•] may cause apoptosis-resistance by S-nitrosating proteins including caspases, which is known to have an anti-apoptotic effect. We investigated the effect of NO[•] on the apoptosis of T cells. Jurkat T cells were exposed to the NO[•] donor spermine NONOate, spermine alone, or a combination of Fas ligand (FasL) with spermine NONOate or spermine. Apoptosis was assessed using annexin-V and flow cytometry. Background apoptosis was about 5 %. Spermine NONOate alone (0 – 1000 μM) had no effect on apoptosis. Treatment with 10 – 1000 μM spermine alone significantly increased apoptosis to about 33 %. FasL-induced apoptosis was significantly increased in a dose responsive fashion by spermine (0 – 1000 μM), but was significantly blocked by 1000 μM spermine NONOate. NO[•] can protect Jurkat T cells against FasL- and spermine-induced apoptosis. This provides further evidence that NO[•] may be involved in the resistance of T cells to apoptosis in the RA joint.